

HEMLOCK ROAD BRIDGE
Spanning the North Branch of the Bad River
Brant Township
Saginaw County
Michigan

HAER # MI-126

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73-BRANT.V
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Great Lakes Systems Office
1709 Jackson Street
Omaha, Nebraska 68102

HISTORIC AMERICAN ENGINEERING RECORD

HEMLOCK ROAD BRIDGE

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Location: Spanning the North Branch of the Bad River at Hemlock Road
Brant Vicinity
Saginaw County
Michigan.
QUAD: Chapin Michigan 7.5 minute series.

Date of Construction: ca. 1920.
Saginaw County Road Commission design plans for road reconstruction
done in 1918 under Covert Road Law Petition No. No. 10 show a 80'
span bridge at the site of the current 120' span. After 1920 no further
construction at this site was recorded.

Engineer / Fabricator: Design of the bridge and administration of the bridge construction
contract for the Michigan State Highway Department did the bridge. The
fabricator and contractors for the bridge is not known.

Present Owner: Saginaw County Road Commission

Present Use: Vehicular Bridge

Significance: A representative example of a riveted Parker pony truss bridge. This
bridge is one of 60 still in place, and the only known Parker truss bridge
in Saginaw County.

Project Information: The bridge will be replaced with a new wider bridge.

The bridge was recorded by Joseph G. Periard of the Saginaw County
Road Commission, 3020 Sheridan Avenue, Saginaw, MI 48605.

Description:

The Hemlock Road Bridge is a single span, Parker steel pony truss bridge with rigid structural members and riveted joints. The nine panel structure is 120' in length, has a deck width of 18.5', and the trusses rise 15' feet above the deck. It has a trellis-type railing attached to the battered knee-braces and to both trusses. The superstructure consists of 4" bituminous surface over 5" thick steel reinforced concrete deck supported with a 24" floor beam at each panel point and six 12" I-beam stringers. The bridge stands on steel reinforced concrete abutments. Currently the bridge is posted as a "One Lane Bridge" with weight limits of 21 tons for one unit, 35 tons for two unit, and 50 ton for three unit loads. It carries Hemlock Road over the North Branch of the Bad River approximately 2-1/2 miles north of the village of Brant and 5 miles west of St. Charles, Michigan.

The Parker pony truss is of a design patterned similar to the Pratt truss which was patented by Thomas (1812-75) and Caleb Pratt in 1844. As with the Pratt truss, the Parker truss was a design with vertical compression members and diagonal tension members. In the Parker truss design the top chord is built with a polygonal outline.(i.e., the center of the truss is taller than the ends) It is not known who designed the Parker truss.

It is believed that the Hemlock Road Bridge is an example of a Michigan Standard Pony-Truss Bridge. Starting in 1920 the State Highway Department adopted the steel riveted Parker truss as it's standard pony truss design, with plans provided for trusses of 100, 110, and 120 feet. These standard designs included innovative inside knee braces at every panel point. According to the Engineering News ¹"The advantages of this type of construction are many. Sidewalks may be added without interfering with the design. The bridge is improved in general appearance, and the cramped uncomfortable feeling of driving too close to the structural members is relieved." The knee-braces were connected to the vertical posts directly underneath the top chord and have a batter toward the roadway of about a one on six. They were connected to the web (and not to the top of the flange) of the floor-beam. The Hemlock Road Bridge also a Parker pony truss bridge, used these inside knee-braces at every panel point.

History:

Hemlock Road was one of the early "stone roads" in western Saginaw County. Then called Centerline Road, later designated County Road No. 13,² and finally Hemlock Road, was part of the original system of county roads taken over by the newly formed Saginaw County Road Commission in January of 1918. It served as the main road connecting the village of Brant and the Pere Marquette Railway station in Hemlock, and also was a connector for Fremont, Brant, and Brady Township traffic to the village of St. Charles. Since 1916 Hemlock Road has been a through road from county line to county line. In 1926, traffic along Hemlock Road was given right of way over traffic from intersecting roads and as such designated a "stop thoroughfare".³

¹ "Standard Pony-Truss Bridges for Michigan Highways" *Engineering News* Volume 76, November 23, 1916, p.990.

² *Saginaw Highways 1927* "Third Annual Report to the Board of Supervisors", County Map insert

³ *Saginaw Highways 1926* "Second Annual Report to the Board of Supervisors", p.32.

During 1918, under the provisions of the Covert Road Law enacted by the Michigan Legislature in 1915, a petition was made by the local property owners to the road commission to set up a tax assessment district. This assessment district would finance reconstruction of the section of Centerline Road including the crossing at the Bad River.⁴

The assessment district was created for 4.7 miles of Class "B" (gravel) roads, including 3 miles along Centerline Road in Freemont Township and 1.7 miles in Brant Township. It was designated Covert Road Petition No. 10. Steel reinforcing and concrete items were also added to the contract for new abutments on a 20' span bridge for the crossing at Eagle Creek, and an 80' span bridge for the crossing at the Bad River. The Saginaw County Road Commission awarded the project to J.W. Ederer & Company on December 10, 1918. The awarded cost for the project was \$64,200.00.⁵ It is uncertain whether the above referenced abutments were for new bridges or to repair the existing bridges, in either case, it is evident that the current longer 120' span structure was constructed after 1918.

During a meeting held on February 15, 1919, to approve the apportionment of benefits and tax roll assessment, Nathan B. Richardson the owner of the property bounded by the Bad River, and the Eagle Creek along the west side of the proposed road, had objected to the project "unless an opening was provided through the embankment near the Bad River."⁶ At the same time, his neighbor Township Supervisor John Jennings objected to the building of the culvert requested by Mr. Richardson. Mr. Nicol, the county engineer suggested building a drainage ditch along the west side of the road to carry the water to the Bad River. This issue was a evidently matter of contention of long standing for these neighbors, and for a time the Township Supervisor won out. Design drawings made⁷ did show a ditch along the west side as Mr. Richardson requested, but the water was carried north to the Eagle Drain and not through the embankment to the Bad River. This dispute over the drainage may have been a contributing factor to the decisions made later to eliminate the bridge crossing at the Eagle Creek, and divert the water towards the Bad River alongside a single, larger, 120' span bridge.

Construction did not proceed as originally planned. In a letter to the Road Commission dated October 6, 1919,⁸ "owing to the uncertainty of the bridges and the difficulty of getting teams at this time of the season " the contractor informed the owner that the project would not be completed in the 1919 construction season. It is not known whether the "uncertainty" with the bridges was due to the drainage problems related above, or the difficulty with the contractor in getting teams to do the work.

⁴ Saginaw County Board of Road Commissioners Record, Meeting held April 30, 1918, Volume 1, p.89.

⁵ Saginaw County Board of Road Commissioners Record, Meeting held December 10, 1918, Volume 1, p.235

⁶ Saginaw County Board of Road Commissioners Record, Meeting held February 24, 1919, Volume 1, p.276

⁷ Saginaw County Record Drawings for Covert Road Petition No. 10

⁸ Saginaw County Board of Road Commissioners Record, Meeting held October 6, 1919, Volume 1, p.338

It is likely that at this point, the decision was reached to eliminate the 20' span bridge crossing at Eagle Creek and construct a larger 120' span structure in place of the 80' span structure at the Bad River. It may also have been decided to redirect the creek to the Bad River along the west side of the road. It is also at this point the contractor ceases to refer to the bridges, but after in their correspondence dated November 24, 1919⁹ refers to the bridge over Bad River only.

On November 8, 1919 as stated in a letter to the Road Commission from Frank F. Rogers, State Highway Commissioner of the Michigan State Highway Department, the department accepted a low bid of \$8,750.00 from the Midland Construction Company of Midland to construct the abutments for Reward Bridge R-4 crossing the Bad River in Brant Township.¹⁰ On November 24, 1919, the contractor, J.W. Ederer & Company requested thirty days in 1920 to finish the road. This was "on account of the bridge over Bad River which is now under construction."¹¹ The Board of Road Commissioners granted the contractor additional time of thirty days after May 1, 1920, to complete the project.

It is believed that although the Covert Road contract with J.W. Ederer & Company originally included the construction of the abutments, the work of constructing the abutments was given to Midland Construction Company. The construction of the approach roads were completed by June 1920.

Under the provisions of the State Reward Act of 1919, the Michigan State Highway Department was required to administer the contract for the fabrication and construction of all reward bridges including State Reward Bridge R-4. Although the records concerning the construction of this bridge no longer exist, it is likely that the construction of the current Hemlock Road Bridge was completed through the Michigan State Highway Department during the winter of 1919. Since that time to the present, no further records were found concerning a major construction project along this section of Hemlock Road, nor have any major repairs been made to the bridge structure itself.

Due to the narrow width (18.5') of the bridge, the site has been the scene of numerous accidents in recent years. Included among these is an accident that took place on September 16, 1995,¹² in which an area woman was killed. For these reasons and due to the poor condition of the bridge, federal critical bridge funds for replacement of the Hemlock Road Bridge were awarded to Saginaw County on October 1, 1994. The replacement structure proposed is a pre-stressed concrete box beam structure with one 50' span, and one 70' span. The proposed roadway width is 34'. The new bridge is to be completed in Fall, 1998.

⁹ Saginaw County Board of Road Commissioners Record, Meeting held November 24, 1919, Volume 1, p. 347.

¹⁰ Saginaw County Board of Road Commissioners Record, Meeting held November 8, 1919, Volume 1, p. 373.

¹¹ Ibid

¹² "St. Charles woman killed as vehicle hits iron bridge", *The Saginaw News*, Saginaw MI, September 17, 1995

Bibliography:

Jackson, Donald C., *Great American Bridges and Dams*, Washington, D.C., 1988

Hyde, Charles K., *Historic Highway Bridges of Michigan*, Wayne State University Press, 1993

Beers, F. W. & Co., *Atlas of Saginaw County Michigan*, NY, 1916

Pohl, Dorothy G. & Brown, Norman E., *The History of Roads*, a speech to the Association of Southern Michigan Road Commissions, December 2, 1997